SPECIFICATION

Motion Picture Editing Method and Motion Picture Editing Apparatus

Technical Field

The present invention relates to a motion picture editing method and a motion picture editing apparatus editing motion picture data played and output from at least one motion picture file stored on a recording medium and having a motion picture data body arranged in temporal order along with time management information.

Background Art

Multimedia information employed for the so-called streaming playback playing data while receiving the same is described with reference to Fig. 23. Each multimedia information, independently stored as a single completed file every certain unit, is formed by header control information indicating the attribute, the property etc. of the overall multimedia information included in this file and a multimedia data body.

The header control information includes control information related to the overall multimedia information stored in the file, such as a file identifier (file ID) for specifying the file, the length of the multimedia data body, the time required for playing the overall file, the average/maximum bit rate, the types and the number of media included in the multimedia data body, the dependence relation between the media (an upper layer and a lower layer of hierarchized information, the right channel, the left channel, the center and the surround of an audio etc.), the association between the media (Japanese/English/French/voice guidance and subtitles of images and voices, Japanese/English of close captions etc.) and the like.

The header control information also includes information on systematic control, related to only partial media included in the multimedia information but necessary for playing the file, such as the frame size/resolution of images, the coding system (identification of ITU-Recommendation H.261, H.262, H.263, H26L, ISO standard 11172 (MPEG-

output from the multimedia information file X shown in Fig. 23, an instruction for playing the part B (a start time stamp 6 and an end time stamp 8) subsequently to the part A (a start time stamp 1 and an end time stamp 2) is supplied. When the motion picture data is played while reading the time stamps on the basis of this instruction, however, it follows that the part A is started to be played and displayed when the playback time of the playback timer reaches 1, no part is displayed while the timer time is 3 to 6 and the part B is started to be played and displayed when the timer time reaches 6 as shown in Fig. 26, and the part A and the part B cannot be continuously played immediately after the playback instruction.

The playback time for arbitrarily extracted partial data is decided by the timer time (playback reference time) of the playback timer and cannot be changed with respect to the timer time, and hence the data cannot be edited by temporal cut and paste employing extraction, division, connection and the like.

The present invention has been proposed in consideration of the aforementioned problems, and an object of the present invention is to provide a motion picture editing method and a motion picture editing apparatus capable of readily editing a multimedia data body arranged in temporal order along with time stamps by temporal cut and paste employing extraction, division, connection and the like.

Disclosure of the Invention

The motion picture editing method according to the present invention is a motion picture editing method editing motion picture data played and output from at least one motion picture file stored on a recording medium and having a motion picture data body arranged in temporal order along with time management information. The motion picture editing method previously specifies at least one playback range in the motion picture file and a playback time of the playback range, and appends information for managing the specified playback range and the playback time of the playback range to an area other than the motion picture data body on the recording medium as edit information. Motion

picture data of the specified range in the motion picture file is output at the specified time on the basis of the time management information and the edit information.

For example, time management information (time stamp) included in the motion picture data body, a physical storage position in the motion picture file, a packet number, the serial number of index information, a frame/field number, an arbitrary playback time or the like can be employed for specifying the playback range.

Preferably, the motion picture editing method changes the time management information in the output motion picture data on the basis of the edit information, and creates a new motion picture file.

More preferably, the motion picture editing method appends edit information including information for managing the playback time of the output motion picture data to the output motion picture data, and creates a new motion picture file.

According to another aspect of the present invention, the motion picture editing method is a motion picture editing method editing motion picture data played and output from at least one motion picture file stored on a recording medium and having a motion picture data body arranged in temporal order along with time management information. At least one playback range in the motion picture file and a playback time of the playback range are previously specified, and information for managing the specified playback range and the playback time of the playback range is appended to an area other than the motion picture data body on the recording medium as first edit information. An edit result in the motion picture file is defined on the basis of the time management information and this first edit information, at least one playback range in the edit result and a playback time of the playback range are further specified, information for managing the specified playback range and the playback time of the playback range is appended to an area other than the motion picture data body on the recording medium as second edit information, and motion picture data of the specified range in the motion picture file is output at the specified time on the basis of time management information in the edit

result and the second edit information.

According to still another aspect of the present invention, a motion picture editing apparatus editing motion picture data played and output from at least one motion picture file stored on a recording medium and having a motion picture data body arranged in temporal order along with time management information is provided with edit information read means reading information for managing at least one playback range in a previously specified motion picture file and a playback time of the playback range, playback object extract means extracting prescribed motion picture data on the basis of the information for managing the playback range read in the edit information read means, a time management information read part reading time management information in the motion picture data extracted in the playback object extract means, a playback time adjustment part carrying out a prescribed operation on the time management information read in the time management information read part and calculating a specified playback time on the basis of the information for managing the playback time read in the edit information read part, a comparator comparing the specified playback time calculated in the playback time adjustment part with a time counted by a playback timer, and a controller outputting motion picture data of the specified range in the motion picture file at the specified time on the basis of a result of comparison in the comparator.

Preferably, the motion picture editing apparatus has a time management information change part changing the time management information in the motion picture data output from the controller to the specified playback time calculated in the playback time adjustment part.

More preferably, the motion picture editing apparatus has an edit information appending part appending new edit information set on the basis of the edit information to the motion picture data output from the controller.

Brief Description of the Drawings

Fig. 1 is a schematic diagram showing the appearance of a motion